

## ABSTRACT

To provide an optical transmission system which cancels out noise components and whose construction cost is lower than that of the conventional system, the present invention is an optical transmission system for transmitting an optical signal from an optical transmitter to an optical receiver and outputting an output electrical signal after a noise canceling process is performed. The optical receiver and transmitter are connected by one optical fiber, through which an optical signal is transmitted before being intensity-modulated. The optical receiver includes; a first processing unit receiving an optical signal, intensity-modulating the received optical signal, and splitting the intensity-modulated optical signal into two optical signals whose respective intensity-modulated components are in antiphase; first and second optical transmission fibers transmitting the two optical signals respectively; and a second processing unit converting the two optical signals into electrical signals respectively, and generating an output electrical signal by performing differential amplification.